FIG. 1
10
"YES"
12
CUSTOMER
14
CUSTOMER SERVICE REPRESENTATIVE
16
BUSINESS ANALYST/MANAGER
18
WEB SERVER
20
ON-LINE DECISION ENGINE
22
ENTERPRISE DATA
24
WEB CLIENT
26
WEB CLIENT
A
B
C
D
REPORTING AND TUNING
"NORMAL" INTERACTION OF CUSTOMER WITH WEB STOREFRONT WITH DECISION FOR EACH PAGE
ON-LINE DECISION ENGINE DECIDES TO ASK "MAY I HELP YOU?" THE OFFERED HELP MAY BE LIVE OR AUTOMATED.
IF CUSTOMER SAYS YES TO LIVE HELP, THEN
-DECISION ENGINE ASSIGNS A CSR
-SYSTEM SENDS RELEVANT DATA TO CSR
-SYSTEM ENABLES TEXT CHAT, ESCORTED BROWSING, AND/OR VOICE CONNECTION
BUSINESS ANALYST/MANAGER
-MONITORS DECISIONS BEING MADE
-TUNES DECISION FLOWS FOR BUSINESS PERFORMANCE

FIG. 2

28
SOURCE ATTRIBUTES: CUSTOMER ID, CUSTOMER PROFILE, PAGES VISITED, SHOPPING CART,...
MIHU DECISION FLOW
CURRENT BUSINESS VALUE
32
TRUE
EVERY THIRD PAGE, UNLESS BUSINESS VALUE > 70
40
DETERMINE MIHU SCORE
DETERMINE FRUSTRATION SCORE
42
TRUE
DETERMINE OPPORTUNITY SCORE
44
TRUE
MIHU SCORE
34
TRUE
(COMBINES CURRENT BUSINESS VALUE, FRUSTRATION SCORE, OPPORTUNITY SCORE)
MIHU HAS NOT BEEN OFFERED YET
46
DETERMINE WHETHER TO OFFER MIHU
MIHU OVERRIDE SCORE
36
TRUE
("OVERRIDES" OF MIHU SCORE, e.g., IF LEATHER COAT GETS INTO SHOPPING CART THEN CONTRIBUTE 90)
(ALLOWS FOR SIMPLE
DETERMINE AGENT LOAD
48
TRUE
OFFER MIHU
38
TRUE
(COMBINES MIHU SCORE, MIHU OVERRIDE SCORE, AND AGENT LOAD)
TARGET ATTRIBUTES: OFFER MIHU, FRUSTRATION SCORE,...
30

FIG. 3

	50 SESSION ID	51 PAGE	52 BUSINESS VALUE	53 FRUSTRATION SCORE	54 OPPORTUNITY SCORE	55 MIHU SCORE	56 OVERRIDE SCORE	57 CSR LOAD	58 OFFER MIHU
59	250	1	70	6	0	46	0	80	FALSE
60	250	2	70	14	0	54	0	81	FALSE
61	250	3	70	20	0	60	0	81	FALSE
62	250	4	70	24	0	64	0	79	FALSE
63	250	5	85	8	51	83	0	78	TRUE
64	282	1	40	6	0	25	0	83	FALSE
65	282	2	40	–	–	–	0	82	FALSE
66	282	3	57	–	–	–	90	82	TRUE
67	282	4	57	16	29	43	–	–	–
68	282	5	57	–	–	–	–	–	–
69	282	6	71	19	37	58	–	–	–
70	282	7	71	25	48	58	–	–	–

FIG. 4

MIHU DECISION FLOW
32
CURRENT BUSINESS VALUE
40
DETERMINE MIHU SCORE
42
DETERMINE FRUSTRATION SCORE
34
MIHU SCORE
DETERMINE OPPORTUNITY SCORE
45
WEIGHTED PROMO LIST
36
MIHU OVERRIDE SCORE
38
OFFER MIHU
48
DETERMINE AGENT LOAD
46
DETERMINE WHETHER TO OFFER MIHU
72
CURRENT BUSINESS VALUE [0 TO 100]
RULES:
(1) IF GREEN CARD THEN CONTRIBUTE 40
(2) IF GOLD CARD THEN CONTRIBUTE 70
(3) IF SHOPPING CART NOT EMPTY THEN
CONTRIBUTE 2* (SHOPPING CART PROFIT)
(4) IF BOUGHT SOMETHING IN PAST 30 DAYS THEN
CONTRIBUTE 20
COMBINING POLICY: SUM OF TRUE RULES
40
26
20
86
74
WEIGHTED PROMO LIST [LIST OF RECORD OF <ITEM, WEIGHT>]
RULES:
(1) IF RAINCOAT IN SHOPPING CART THEN
CONTRIBUTE <UMBRELLA, 40>
(2) IS SHIRT IN SHOPPING CART THEN
CONTRIBUTE <SWEATER, 30>
(3) IF CUSTOMER LIVES IN SUNNY CLIMATE
THEN CONTRIBUTE <STRAW HAT, 10>
(4) IF CUSTOMER LIVES IN COLD CLIMATE
THEN CONTRIBUTE <SWEATER, 20>
COMBINING POLICY: SORTED WEIGHTED SUM
<UMBRELLA, 40>
<SWEATER, 30>
<SWEATER, 20>
[<SWEATER, 50>,
<UMBRELLA, 40>]

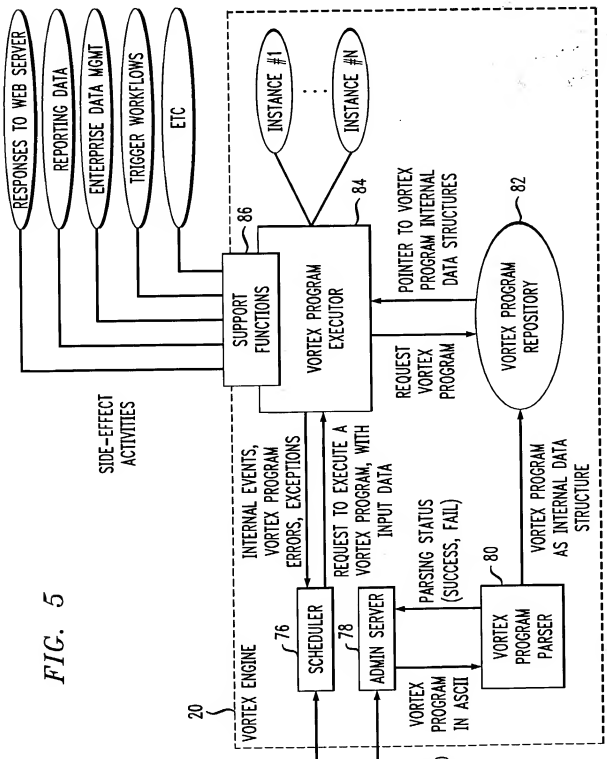
RESPONSES TO WEB SERVER
REPORTING DATA
ENTERPRISE DATA MGMT
TRIGGER WORKFLOWS
ETC
INSTANCE #1
INSTANCE #N
86
84
82
SUPPORT FUNCTIONS
VORTEX PROGRAM EXECUTOR
POINTER TO VORTEX PROGRAM INTERNAL DATA STRUCTURES
REQUEST VORTEX PROGRAM
VORTEX PROGRAM REPOSITORY
SIDE-EFFECT ACTIVITIES
INTERNAL EVENTS, VORTEX PROGRAM ERRORS, EXCEPTIONS
REQUEST TO EXECUTE A VORTEX PROGRAM, WITH INPUT DATA
PARSING STATUS (SUCCESS, FAIL)
VORTEX PROGRAM AS INTERNAL DATA STRUCTURE
20
VORTEX ENGINE
76
SCHEDULER
78
ADMIN SERVER
80
VORTEX PROGRAM PARSER
VORTEX PROGRAM IN ASCII
ALL EXTERNAL EVENTS (e.g., NEW DECISION REQUESTS)
ADMIN EVENTS (NEW/MODIFIED VORTEX PROGRAMS, NEW/MODIFIED SUPPORT FUNCTIONS)

FIG. 5

FIG. 6

STRATEGY	CONVERTING LEGACY SITES EASY	HTTPS HANDLED	HTTP RESPONSE TRANSFORMATION REQUIRED	HTTP RESPONSE PARSING REQUIRED
CONTENT GENERATION SCRIPTS SEND HIGH-LEVEL SEMANTICS TO ENGINE	NO	YES	NO	NO
CONTENT GENERATION SCRIPTS SEND RAW HTML TO ENGINE	YES	YES	NO	YES
WRAPPER SCRIPTS	YES	YES	MAYBE	YES
PROXIES	YES	NO	NO	YES
WEB SERVER EXTENSIONS	YES	YES	NO	NO

FIG. 7